

# Digital Asset Management with Free and Open Tools

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Democracy Now!  
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# Outline

- 1 Recording
- 2 Encoding
- 3 Dissemination and Access
- 4 Digital Preservation
- 5 Metadata

# Introduction

- *Democracy Now!*
  - <http://www.democracynow.org/>
- Free Software and Open Standards
  - <http://www.fsf.org/>
  - <http://www.openstandards.net/>



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<http://www.kinodv.org/>

```
mlc@ahti.internal.democracynow.org: ~  
mlc@ahti:~$ dvgrab --duration 59:05 --format raw --size 0 demo-  
Found AV/C device with GUID 0x002011010e000400  
Warning: Cannot set RR-scheduler  
Capture Started  
"demo-002.dv": 17.97 MB 157 frames timecode 00:00:05,09 date 2067,02,15 22:26  
:25  
Capture Stopped  
mlc@ahti:~$
```

# cron

Comes with Linux etc.



Photo: noii, creative commons licensed, <http://flickr.com/photos/noii/2326900487/>

<http://www.mitzpettel.com/software/vidi.php> (or search "vidi")



(not Free Software, but close enough)



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# Codecs

- H.264
- MPEG-2
- Ogg Theora

# Software

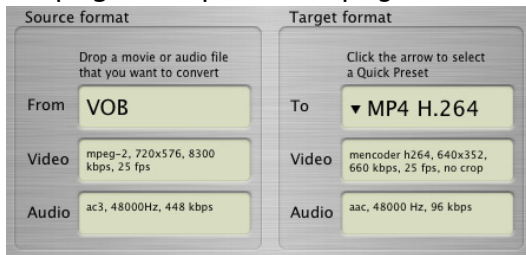
## Command-Line

- ffmpeg: <http://ffmpeg.mplayerhq.hu/>
  - x264
- mencoder: <http://www.mplayerhq.hu/>
- MP4Box: <http://gpac.sourceforge.net/>

# Software

## Mac OS X GUI

- ffmpegX: <http://homepage.mac.com/major4/>



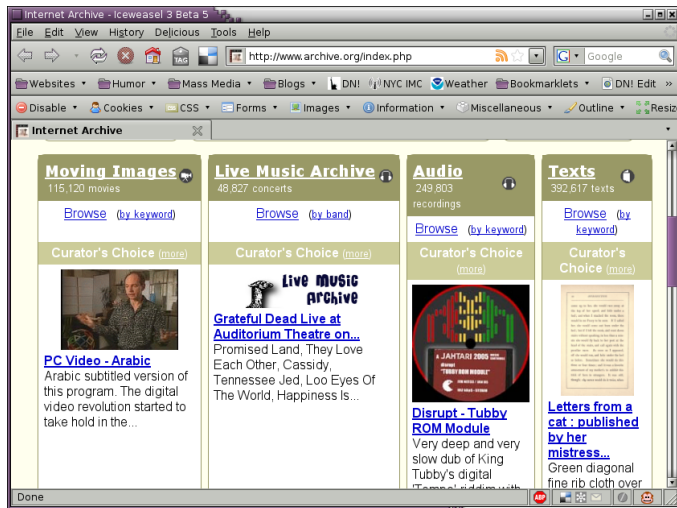
- x264 for quicktime (the good one!):  
<http://www003.upp.so-net.ne.jp/mycometg3/>  
(search “x264 quicktime japan”)

# Outline

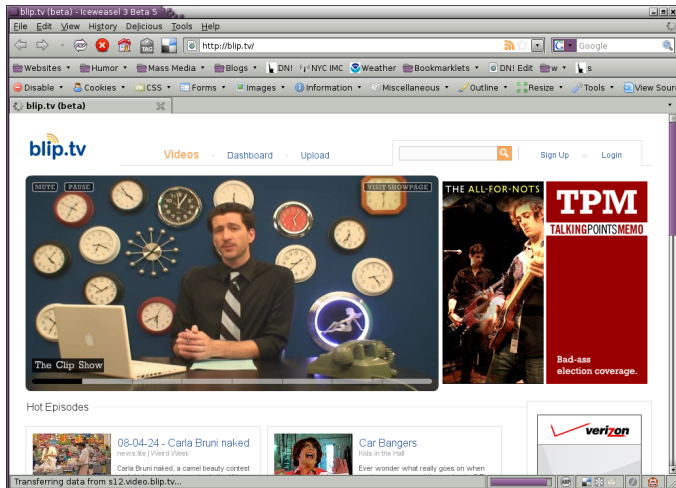
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# The Internet Archive

<http://www.archive.org/>



http://www.blip.tv/



(ad-supported, but more open than YouTube)

# H.264 on the Web

- Adobe Flash 9 **Update 3** (not Free Software)
- JW FLV Media Player

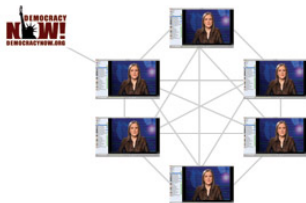




# BitTorrent

- <http://ewheel.democracynow.org/>
- Miro: <http://www.getmiro.com/>

Distribution in full-res **via bittorrent** (p2p):



Cost: **\$200** / month (fixed)

Distribution in full-res **without p2p**:



Cost: **\$1200** / month (rises w/ viewers)

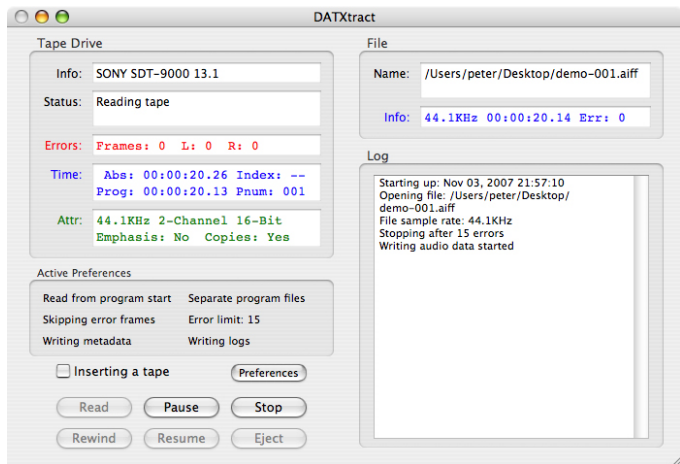
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# Digital Tape Formats



<http://pdicamillo.org/~peter/datxtract/>

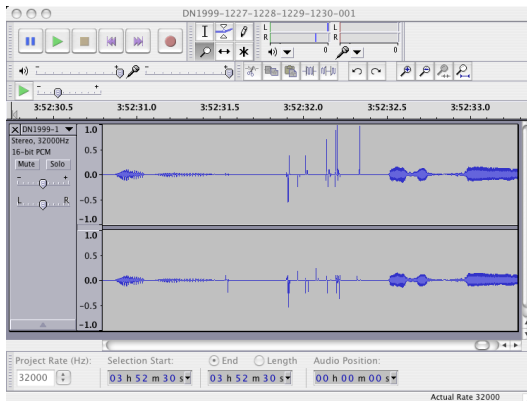


# DATXtract

## Quality Control

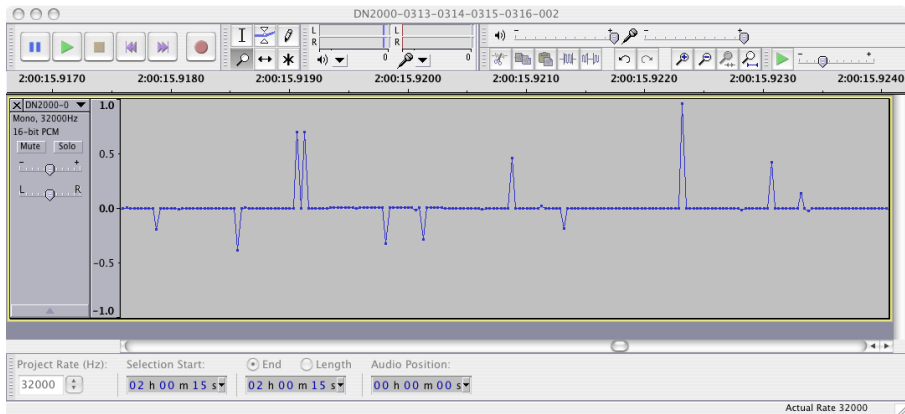
```

Channel: L
Abs: 01:57:06.04 Prog: 00:00:00.00
File start: 01:58:42.00
File end: 01:58:42.00 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.13 Prog: 00:03:24.29
File start: 01:52:13.17
File end: 01:52:13.19 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.17 Prog: 00:03:35.00
File start: 01:52:13.29
File end: 01:52:13.31 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.19 Prog: 00:03:35.16
File start: 01:52:13.31
File end: 01:52:13.00 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.19 Prog: 00:03:35.12
File start: 01:52:13.00
File end: 01:52:13.02 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.20 Prog: 00:03:35.14
File start: 01:52:13.02
File end: 01:52:13.04 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.23 Prog: 00:03:35.16
File start: 01:52:13.04
File end: 01:52:13.00 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.22 Prog: 00:03:35.18
File start: 01:52:13.06
File end: 01:52:13.00 (1920 samples)
Including error frame:
Channel: L
Abs: 01:57:06.24 Prog: 00:03:35.22
File start: 01:52:13.10
File end: 01:52:13.12 (1920 samples)
Including error frame:
Interpolate flags: 00
File start: 01:58:34.13
File end: 01:58:34.15 (1920 samples)
Including error frame:
Interpolate flags: 00
  
```



# DATXtract

## Quality Control



# Live Capture Plus

<http://www.squarebox.co.uk/lcplus.html>



(not Free Software, £35)

<http://www.bacula.org/>

| File |          | Help      |   | Console         |     | Restore       |   |    |   |   |       |                     |  |  |  |  |  |  |  |  |  |
|------|----------|-----------|---|-----------------|-----|---------------|---|----|---|---|-------|---------------------|--|--|--|--|--|--|--|--|--|
| 130  | ML1462.3 | Read-Only | 1 | 444,204,343,236 | 440 | 1,576,800,000 | 0 | 13 | 0 | 0 | LTO-2 | 2008-02-17 00:36:56 |  |  |  |  |  |  |  |  |  |
| 152  | ML1463.3 | Read-Only | 1 | 437,448,840,192 | 438 | 1,576,800,000 | 0 | 4  | 0 | 0 | LTO-3 | 2008-03-13 00:30:06 |  |  |  |  |  |  |  |  |  |
| 153  | ML1464.3 | Read-Only | 1 | 421,541,148,672 | 422 | 1,576,800,000 | 0 | 14 | 0 | 0 | LTO-3 | 2008-03-13 02:25:31 |  |  |  |  |  |  |  |  |  |
| 154  | ML1465.3 | Read-Only | 1 | 420,162,784,000 | 421 | 1,576,800,000 | 0 | 13 | 0 | 0 | LTO-3 | 2008-03-13 04:21:50 |  |  |  |  |  |  |  |  |  |
| 155  | ML1466.3 | Read-Only | 1 | 433,260,307,648 | 434 | 1,576,800,000 | 0 | 13 | 0 | 0 | LTO-3 | 2008-03-14 01:46:11 |  |  |  |  |  |  |  |  |  |
| 156  | ML1467.3 | Read-Only | 1 | 361,025,344,512 | 362 | 1,576,800,000 | 0 | 9  | 0 | 0 | LTO-3 | 2008-03-21 20:42:00 |  |  |  |  |  |  |  |  |  |
| 166  | ML1468.3 | Read-Only | 1 | 447,697,655,296 | 448 | 1,576,800,000 | 0 | 11 | 0 | 0 | LTO-3 | 2008-03-22 22:59:22 |  |  |  |  |  |  |  |  |  |
| 167  | ML1469.3 | Read-Only | 1 | 435,320,331,264 | 436 | 1,576,800,000 | 0 | 12 | 0 | 0 | LTO-3 | 2008-03-22 01:03:07 |  |  |  |  |  |  |  |  |  |
| 168  | ML1470.3 | Read-Only | 1 | 436,693,275,648 | 438 | 1,576,800,000 | 0 | 13 | 0 | 0 | LTO-3 | 2008-03-27 02:43:45 |  |  |  |  |  |  |  |  |  |
| 169  | ML1471.3 | Read-Only | 1 | 427,135,371,264 | 429 | 1,576,800,000 | 0 | 14 | 0 | 0 | LTO-3 | 2008-03-27 00:02:00 |  |  |  |  |  |  |  |  |  |
| 170  | ML1472.3 | Read-Only | 1 | 414,986,084,352 | 416 | 1,576,800,000 | 0 | 15 | 0 | 0 | LTO-3 | 2008-03-27 11:06:19 |  |  |  |  |  |  |  |  |  |
| 171  | ML1473.3 | Full      | 1 | 496,309,020,984 | 498 | 1,576,800,000 | 0 | 9  | 0 | 0 | LTO-3 | 2008-04-04 01:30:08 |  |  |  |  |  |  |  |  |  |
| 172  | ML1474.3 | Full      | 1 | 411,112,396,800 | 412 | 1,576,800,000 | 0 | 11 | 0 | 0 | LTO-3 | 2008-04-09 01:09:02 |  |  |  |  |  |  |  |  |  |
| 173  | ML1475.3 | Full      | 1 | 397,637,710,848 | 399 | 1,576,800,000 | 0 | 12 | 0 | 0 | LTO-3 | 2008-04-18 00:16:44 |  |  |  |  |  |  |  |  |  |
| 180  | ML1476.3 | Full      | 1 | 384,226,698,240 | 385 | 1,576,800,000 | 0 | 13 | 0 | 0 | LTO-3 | 2008-04-18 02:24:29 |  |  |  |  |  |  |  |  |  |
| 181  | ML1477.3 | Full      | 1 | 396,331,987,968 | 397 | 1,576,800,000 | 0 | 14 | 0 | 0 | LTO-3 | 2008-04-18 04:34:24 |  |  |  |  |  |  |  |  |  |
| 182  | ML1478.3 | Error     | 1 | 203,846,623,936 | 204 | 1,576,800,000 | 0 | 9  | 1 | 1 | LTO-3 | 2008-04-18 05:42:13 |  |  |  |  |  |  |  |  |  |
| 183  | ML1479.3 | Append    | 1 | 125,962,965,024 | 127 | 1,576,800,000 | 0 | 10 | 1 | 1 | LTO-3 | 2008-04-19 11:09:46 |  |  |  |  |  |  |  |  |  |
| 184  | ML1480.3 | Append    | 1 | 64,512          | 0   | 1,576,800,000 | 0 | 11 | 1 | 1 | LTO-3 | 0000-00-00 00:00:00 |  |  |  |  |  |  |  |  |  |
| 185  | ML1481.3 | Append    | 1 | 64,512          | 0   | 1,576,800,000 | 0 | 12 | 1 | 1 | LTO-3 | 0000-00-00 00:00:00 |  |  |  |  |  |  |  |  |  |
| 186  | ML1482.3 | Append    | 1 | 64,512          | 0   | 1,576,800,000 | 0 | 13 | 1 | 1 | LTO-3 | 0000-00-00 00:00:00 |  |  |  |  |  |  |  |  |  |
| 187  | ML1483.3 | Append    | 1 | 64,512          | 0   | 1,576,800,000 | 0 | 14 | 1 | 1 | LTO-3 | 0000-00-00 00:00:00 |  |  |  |  |  |  |  |  |  |

Type your command below

list media pool=Default

Send

Connected to the director.





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# Adding Metadata

The screenshot shows a window titled "Properties for Film". At the top, there are "Extract" and "Delete" buttons. Below them is a table with columns: Enabled, Name, Start Time, Duration, Format, and ID.

| Enabled                             | Name              | Start Time | Duration | Format      | ID   |
|-------------------------------------|-------------------|------------|----------|-------------|------|
|                                     | Film              | 0:00.00    | 17:28.12 | -NA-        | -NA- |
| <input checked="" type="checkbox"/> | MPEG2 Muxed Track | 0:00.00    | 17:28.12 | MPEG2 Muxed | 1    |

Below the table is a horizontal scroll bar. Underneath is a tabbed interface with four tabs: "Annotations", "Resources", "Audio Settings", and "Presentation". The "Annotations" tab is selected.

Inside the "Annotations" tab, there is a table with two columns: "Annotation" and "Value".

| Annotation  | Value  |
|-------------|--|
| Title       | Film   |
| Director    | Samuel Beckett   |
| Year        | 1965   |
| Artist      | Buster Keaton  |
| Description | A twenty-minute, almost totally silent film (no dialogue or music one 'shhhh!') in which Buster Keaton   |
| Information | Downloaded from the Internet Archive <a href="http://www.archive.org/details/busterkeatonfilm">http://www.archive.org/details/busterkeatonfilm</a> |
|             |  |
|             |  |
|             |  |

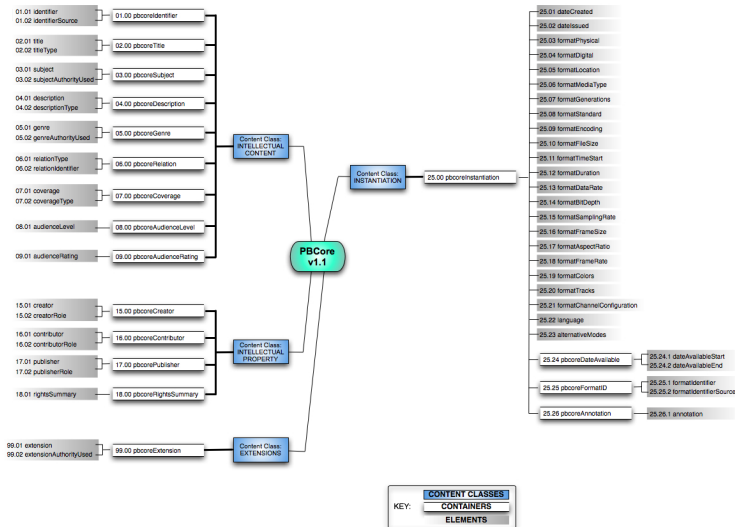
At the bottom of the "Annotations" section, there is an "Add Annotation" button with a dropdown arrow and a "Remove Selected Annotations" button.

# Extracting Metadata

- <http://getid3.sourceforge.net/>
- [http://www.omino.com/sw/qt\\_tools/](http://www.omino.com/sw/qt_tools/)
- <http://mediainfo.sourceforge.net/en/>

# Storing Metadata

## PBCore



# Thank You

Questions?